REMARKS

Responsive to the outstanding Office Action, applicant has carefully studied the Examiner's rejections and the comments relative thereto. Favorable reconsideration of the application is respectfully requested in light of the following detailed arguments.

In this response, independent claims 1, 21 and 34 have been amended to indicate that the first layer comprises a silicon oxide. Claim 3 has been cancelled. No new matter has been introduced by these amendments.

In the outstanding Office Action, the Examiner has indicated that claims 4-7 and 23 have been objected to as depending from a rejected base claim, but would be allowable if rewritten in independent form claiming the limitations of their respective base claims and any intervening claims. It is noted that previously, claim 3 was objected to as being based on a rejected base claim, but was indicated as being allowable if rewritten in independent form, containing the limitations of its base claim and any intervening claims. For the reasons stated below, it is believed that broader claim coverage than currently indicated by the Examiner is available, specifically that of previously pending claim 3 (which has been incorporated into claims 1).

Claims 1, 10-16, 20, 21 and 25-30 were rejected under 35 USC §102(e) as being anticipated by Guiselin. Independent claims 1 and 21 (from which the other claims mentioned hereinabove depend) have been amended to include the fact that the underlayer comprises a silicon oxide (the subject matter of previously pending claims 3), which the Examiner has previously indicated was not anticipated by Guiselin. It is therefore submitted that Guiselin does not anticipate these claims. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 3, 8, 9, 22 and 34-36 were rejected under 35 USC §103 as being unpatentable over US 5,965,246 to Guiselin et al. Claims 17-19 and 31-33 were rejected under 35 USC §103 as being unpatentable over Guiselin in view of US 5,935,702 to Macquart. Claim 24 was rejected under 35 USC §102(e) as anticipated by, or in the alternative under 35 USC §103 as being obvious over Guiselin.

Before discussing the prior art in detail, applicants wish to review the present invention as disclosed in independent claims 1, 21 and 34. Claim 1 discloses a process for the production of a

heat-treatable low emissivity coated glass. The process comprises depositing an underlayer onto a glass substrate by a pyrolytic deposition process, and subsequently depositing a reflective metal layer by a vacuum deposition method, directly on the underlayer. The underlayer comprises a silicon oxide.

Claim 21 discloses a heat-treatable low emissivity coated glass comprising a glass substrate having a multilayer coating on one surface. The multilayer coating comprises a pyrolytically deposited underlayer comprising a silicon oxide which is deposited directly onto the glass substrate, a vacuum deposited reflective metal layer that is deposited directly on the underlayer, and a vacuum deposited anti-reflection layer. The underlayer comprises a silicon oxide.

Claim 34 discloses a heat-treatable low emissivity coated glass. The glass comprises a glass substrate having a multilayer coating on one surface. The multilayer coating comprises an oxygen scavenging underlayer deposited on the substrate, a vacuum deposited reflective metal layer that is deposited directly on the underlayer and a vacuum deposited anti-reflection layer. The underlayer comprises a silicon oxide.

Guiselin discloses a glass substrate coated with a stack of thin layers. At least one of the layers reflects in the infrared or solar radiation range and comprises a dielectric material. This dielectric layer is disposed between first and second coatings. An interlayer with a refractive layer less than that of the substrate is interposed between the substrate and the coating stack. Guiselin suggests that the interlayer 2 can be deposited by pyrolytic deposition and the first dielectric coating 3, the silver layer 4, the protective layer 5 and the second dielectric layer 3 by pyrolysis.

As argued previously, the deposition of Guiselin's silver layer on top of a first dielectric layer is consistent with conventional wisdom. Nowhere does Guiselin teach or suggest the possibility of depositing the underlayer through a pyrolytic process and directly depositing the reflective metal layer directly on the pyrolytically deposited underlayer. Thus, the teaching and suggestion of Guiselin is contrary to the current claims placing the reflective metal layer directly on underlayer.

The Examiner states that one skilled in the art would find it obvious to amend the disclosure of Guiselin to use silicon oxide as the underlayer deposited by pyrolysis with a reasonable expectation that such layer would be suitable as the interlayer in the stack of layers exemplified at column 9. Applicant disagrees with this conclusion of the Examiner for the reasons stated below.

Guiselin indicates, in its disclosure, the necessity of a dielectric layer. Column 2, lines 46-59, note the importance to the invention of a "functional" layer, interposed between the first and second coatings, which is a dielectric layer. This paragraph notes that according to the "intention" [sic] an additional layer called an interlayer, is interposed between this layer and the substrate. In the same vein, the following paragraph notes that the appearance of the article can be greatly improved by the disposition of a layer between the substrate and the known dielectric/metal/dielectric stack. This is consistent with the only drawing shown in the application, which notes a substrate 1, with an interlayer 2, with the dielectric 3, metal 4 (protective film 5) and second dielectric stack 6 shown therein. Thus Guiselin clearly show the necessity of each of these layers for the intended functionality of the reference.

The Examiner notes that col 3, lines 64- col 4, line 10 indicates that either a low-density oxygen deficient silicon oxide layer or an aluminum oxyfluoride layer is suitable as the interlayer. Applicant agrees that Guiselin states that this is a suitable interlayer, but this is not equivalent to the underlayer claimed in the present invention. The Examiner refers to column 9 to suggest that these layers would be suitable as the interlayer in the disclosed stack of layers. The material in column 9 is listed as Guiselin as are computer models suggested as proof of a concept. None of these models even suggest silicon oxide layers, instead referring to aluminum oxyfluoride layers or tin oxide layers. It is respectfully submitted that the Guiselin reference does not render any of the independent claims, as amended, obvious.

With regard to claim 21, this claim has been further amended to indicate that the pyrolytically deposited underlayer is deposited directly on the glass (and as previously claimed the metal layer is deposited directly on the underlayer). Again, with Guiselin's inclusion of a necessary dielectric layer between the interlayer and the metal layer, this further distinguishes claim 21 from the prior art.

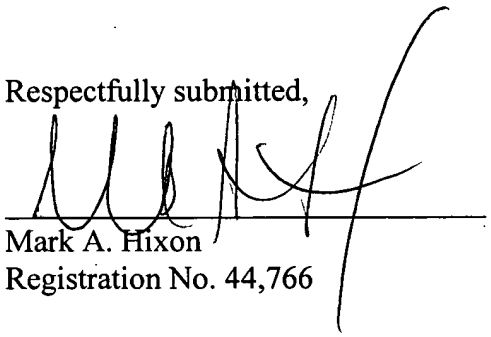
Macquart discloses a transparent glass substrate, provided with a stack of thin layers having at least one metallic layer having properties in the infrared range, particularly having low emissivity. Two coatings having a base of dielectric material located one under and the other over the layer also have properties in the infrared range. A protective metallic layer is placed immediately over an in contact with the layer having properties in the infrared range. In order to prevent the modification of properties of the stack, particularly optical and thermal properties, in the case where the substrate is submitted to a thermal treatment of the tempering or bending kind, the second coating having a base of dielectric material, includes a barrier layer for the diffusion of oxygen of a thickness of at least 10 nanometers and preferably of at least 20 nanometers, and further, the layer having properties in the infrared range is directly in contact with the underlying dielectric coating.

The teachings of Macquart are irrelevant to the above arguments with respect to the independent claims. Macquart does not address the deficiency of Guiselin regarding the silicon oxide underlayer. In view of the above, reconsideration and withdrawal of the rejections under 35 USC §103 are respectfully requested.

For the reasons above, it is submitted that independent claims 1, 21 and 34 are allowable over the applied art of record. The remaining claims are believed to be allowable based, at least, upon their dependence from allowable base claims as shown above.

Should the Examiner wish to modify any of the language of the claims, applicants' attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,



Mark A. Hixon
Registration No. 44,766

ATTORNEYS
Marshall & Melhorn, LLC
Four SeaGate - 8th Floor
Toledo, Ohio 43604
(419) 249-7114
(419) 249-7151 Facsimile